

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

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Colorado Department
of Public Health
and Environment

OCT - 7 1999

September 30, 1999

CERTIFIED MAIL # Z 410 224 275
RETURN RECEIPT REQUESTED

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Ms. Karan North
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Mr. Ted Hopkins
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Mr. Bill Wierzbicki
Safe Sites of Colorado, L.L.C.
Rocky Flats Environmental Technology Site
10808 Highway 93, Unit B
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Golden, CO 80403-8200

RE: Compliance Advisory for September 20 & 27, 1999 inspections of Building 776/7 Tank Systems; EPA ID# CO7890010526

Facility Representatives,

On September 20 & 27, 1999, inspectors from the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the "Division") conducted a compliance evaluation of Building 776/7 at the Rocky Flats Environmental Technology Site (RFETS), focusing primarily on the following interim status hazardous/mixed waste tank systems: FBI Pilot Pencil Tanks T-1 and T-2, Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and the Room 440 Degreaser System Piping. RFETS has determined that these tank systems must be monitored at specified frequencies for the generation of combustible gases per Operations Order OO-776-274, *Combustible Gas Maintenance Plan*. The Division has determined that RFETS has failed to adequately implement combustible gas monitoring in these tank systems which has resulted in several deficiencies associated with the requirements for the management of ignitable hazardous wastes as specified in the Colorado Hazardous Waste Regulations (6 CCR 1007-3). The attached Compliance Advisory identifies these deficiencies including failure to maintain tank systems in a manner that minimizes the potential for unplanned releases and/or the possibility of fire or explosion; failure to take appropriate corrective action in a timely manner after determining that explosive concentrations of flammable gases were present in these tank systems; failure to take precautions to prevent the potential for fire or explosion in tank systems; failure to follow the required waste analysis plan; and failure to

1/9
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inspect tank systems on a daily basis. The Compliance Advisory also identifies required corrective actions for bringing the tank systems back into compliance with the Colorado Hazardous Waste Regulations.

Additionally, the Compliance Advisory identifies a deficiency with regard to requirements specified in Compliance Order on Consent number 97-08-21-01, which required RFETS to develop and implement a Tank Management Plan identifying the status of each interim status tank system with regard to a date of achieving closure or rendering such tank system to a state of "RCRA Stable." As defined in the referenced plan, a tank is considered to be RCRA stable when an out-of-service tank system has been placed in a configuration that is protective of human health and the environment. In the Tank Management Plan and in the January 1999 RCRA stable justification letter signed by Kaiser-Hill and DOE, several tank systems, including FBI Pilot Pencil Tanks T-1 and T-2, Pencil Tank T-7, and Organic Solvent Tank T-1106, are described as meeting the criteria for RCRA Stable. However, the need for periodic sampling and purging for combustible gases does not meet the definition of RCRA Stable, and therefore renders the "RCRA Stable" determination incorrect and caused these tanks to be managed in a manner not compliant with regulatory requirements.

In the future, any request for a RCRA stable determination by the Parties will be closely scrutinized by the Division. The Parties have, in the past, made assertions that certain tank systems have met the criteria for being RCRA stable only to determine later that such systems, in fact, continue to pose a risk to human health and the environment. Therefore, the Division is re-evaluating the current process and the required level of documentation required to justify any future determination of RCRA stable.

This Compliance Advisory serves as a mechanism for the Division to document and ensure that appropriate waste management activities for interim status tank systems in Building 776/7 are investigated and completed in a reasonable time frame. You are invited to meet with us to discuss the Compliance Advisory. Please contact James Hindman of my staff at (303) 692-3345 if you have questions, or to schedule a meeting to discuss these matters.

Sincerely,



Joe Schieffelin, Unit Leader
Federal Facilities Permitting and Compliance

Attachment

cc: Flo Phillips, Kaiser-Hill
Randy Leitner, Kaiser-Hill
Dan Miller, AGO
Tim Rehder, EPA
Janice Pearson, EPA
Jefferson County Health Department
Fred Dowsett, CDPHE/HMWMD
Chris Gilbreath, CDPHE/HMWMD





COMPLIANCE ADVISORY

Page 1 of 7

FACILITY: Rocky Flats Environmental Technology Site	EPA ID #: CO7890011526	DATE: September 30, 1999
	ADDRESS: Rocky Flats Environmental Technology Site	
	10808 Highway 93, Unit A, Golden, CO 80403-8200	

This Compliance Advisory provides notice related to information gained during inspection of the above named facility on September 20 & 27, 1999. We advise you that the inspector(s) believes that the "Deficiencies" listed below are violations of Colorado's hazardous waste laws and the "Potential Deficiencies" listed below may be violations of Colorado's hazardous waste laws. Division personnel will review the facts established during this inspection and this notice may be revised to include additions or clarifications as a result of that review.

Please be aware that you are responsible for complying with the State hazardous waste regulations and that there are substantial administrative and civil penalties for failing to do so. Section 25-15-309, C.R.S. provides that any person who violates Section 25-15-308, C.R.S., which includes the Colorado Hazardous Waste Act ("the Act"), Sections 25-15-101 to 316, C.R.S., and the Colorado Hazardous Waste Regulations, 6 CCR 1007-3, may be subject to an administrative penalty of not more than \$15,000 per violation per day during which such violation occurs or to a civil penalty of not more than \$25,000 per violation per day during which such violation occurs. The issuance of this Compliance Advisory does not limit or preclude the Department from pursuing its enforcement options concerning this inspection including issuance of a Compliance Order and assessment of penalties. Also, this Compliance Advisory does not constitute a bar to enforcement action for conditions that the inspector(s) did not observe or evaluate, or conditions found during future inspections of your facility.

To avoid additional enforcement action or reduce the penalties described above you must either correct the "Deficiencies" and "Potential Deficiencies" within a reasonable time, or you must demonstrate to the Division that the "Deficiencies" and "Potential Deficiencies" are not violations of Colorado's hazardous waste laws.

To close out this Compliance Advisory, we encourage you to contact the Compliance Officer listed below, and where necessary, schedule a meeting:

- A) To discuss the Compliance Advisory and answer any questions you may have;
- B) To develop a schedule for correcting the "Deficiencies" and "Potential Deficiencies"; or
- C) To submit information necessary to successfully show that the "Deficiencies" and "Potential Deficiencies" (or any of them) are not violations of Colorado's hazardous waste laws.

Mr. James Hindman, Compliance Officer
Hazardous Materials and Waste Management Division
Colorado Department of Public Health & Environment
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4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
Tel: (303) 692-3345

Failure to respond in a timely fashion to this Compliance Advisory will be considered in any subsequent enforcement action and the assessment of administrative and/or civil penalties.

COMPLIANCE ADVISORY

Page 2 of 7

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
-DEFICIENCIES-		
<p>1) Requirement: A hazardous waste treatment/storage/disposal (TSD) facility is required to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or water which could threaten human health or the environment as required by 6 CCR 1007-3, Section 265.31(a).</p> <p>Deficiency: The Unresolved Safety Question Description (USQD-RFP-95.1051-CAS, Rev. 1 - <i>Gaseous Hydrogen Generation and Accumulation in Solution Tanks in Building 371 and 771</i>) required an assessment of hydrogen generation associated with the management of plutonium nitrate solutions in Building 371 and 771. As an extension to the USQD, an evaluation of organic solutions in storage in Building 776/777 was required. Operations Order OO-776-274, <i>Combustible Gas Maintenance Plan</i>, was developed that requires monthly monitoring of the FBI Pilot Tanks T-1 and T-2.</p> <p>At the time of the September 20, 1999 inspection and dating back to at least October 27, 1997, the US Department of Energy - Rocky Flats Field Office, Kaiser-Hill Limited Liability Corporation (LLC), Rocky Mountain Remediation Services, LLC, and Safe Sites of Colorado, LLC (hereinafter referred to as "the Parties") failed to maintain FBI Pilot Pencil Tanks T-1 and T-2 in Building 776/777 in a manner that minimizes the potential for unplanned releases and/or the possibility of fire or explosion. The Parties failed to conduct monthly sampling of these two tanks for flammable methanol gas as required by Operations Order OO-776-274. During the period of October 1997 through June 1999 the Parties had sampled these two tanks only 9 times. Of the 9 sampling events for FBI Pilot Tank T-2, two events showed methanol concentrations above the lower explosive limit (LEL). Prior to each of these sampling events were extended periods where the tanks were not tested or purged. Data for FBI Pilot Tank T-1 shows similar information although only one sampling event showed methanol concentrations above the LEL. Analysis of the head space for FBI Pilot Tank T-2 indicated a maximum % volume of methanol at 14.26, approximately 2.5 times the LEL of 6%. Analysis of the head space for FBI Pilot Tank T-1 indicated a maximum % volume of 6.09 for methanol, which is greater than the LEL. The upper explosive level (UEL) for methanol is 36% by volume. Thus, these levels are within the explosive range for methanol.</p> <p>In addition to the above, the Parties have failed to conduct quarterly sampling of select tanks for flammable hydrogen gas as required by Standing Order 40, rev. 4, <i>Hydrogen Control Safety Requirements</i> and Operations Order OO-776-274. The following tanks require quarterly monitoring per Standing Order 40: Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and the Room 440 Degreaser System Piping. Prior to the development of the Combustible Gas Maintenance Plan (OO-776-274), hydrogen gas had been detected in these tank systems, even at levels as high as 33%. Thus, these tanks were considered by RFETS to need quarterly evaluations for safety reasons. As this was not accomplished, this too represents a failure to properly manage the facility.</p>		

COMPLIANCE ADVISORY

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
– DEFICIENCIES (continued) –		
<p>2) Requirement: A hazardous waste TSD facility who manages hazardous waste in a tank system must ensure that the waste will not cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail as required by 6 CCR 1007-3, Section 265.194(a).</p> <p>Deficiency: Refer to deficiency number one above for the background on this issue. By failing to implement Operations Order OO-776-274, the Parties failed to ensure that the hazardous waste that is being managed in the FBI Pilot Tanks T-1 and T-2 will not cause such tanks to otherwise fail as a result of a possible explosion due to the buildup of flammable methanol vapors above the LEL. Further, the Parties failed to take corrective action in a timely manner even after determining that the concentration of methanol vapors in the void spaces of these tanks exceeded the LEL of 6%. For example, FBI Pilot Tank T-2 was sampled on August 14, 1998 and the methanol gas concentration was determined to be 14.6% by volume methanol. However, the system was not purged until over one month later on September 14, 1998.</p> <p>The Parties failed to conduct the required monthly sampling and/or failed to obtain the results of the required sampling so that a risk determination could be made. Facility personnel either failed to make senior management aware of the potential problems that had been encountered with scheduling and priorities or senior management failed to act accordingly to correct the identified problems with the tanks in question. Thus, facility personnel and/or senior management failed to minimize threats to human health and the environment from the flammable vapors and potential rupture of these tanks from a fire or explosion.</p> <p>3) Requirement: A hazardous waste TSD facility who manages ignitable waste in a tank system must take precautions to prevent accidental ignition of the waste. The treatment or storage of such ignitable wastes must be conducted so that it does not, among other things, produce uncontrolled flammable fumes, or gases in sufficient quantities to pose a risk of fire or explosion, as required by 6 CCR 1007-3, Section 265.17(a) and (b)(3).</p> <p>Deficiency: As discussed in items 1 and 2, the Parties have failed to sample and purge the FBI Pilot Tanks T-1 and T-2 on schedule, and thus have failed to take precautions to prevent the potential for fire or explosion in these tanks. As discussed in OO-776-274, the continued sampling and purging of these tank systems is required for the purpose of mitigating fire hazards in accordance with the National Fire Protection Association Safety Limits. Neglect by the Parties to effectively implement Operations Order OO-776-274 and to take compensatory measures in response to levels of methanol gas within the explosive range represents a threat to human health and the environment.</p>		

COMPLIANCE ADVISORY

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
– DEFICIENCIES (continued) –		
<p>4) Requirement: A hazardous waste TSD facility must not place ignitable hazardous waste in a tank system unless the requirements of 6 CCR 1007-3, Section 265.198(a) are met.</p> <p>Deficiency: The Parties have failed to comply with 6 CCR 1007-3, Section 265.198(a) because the tanks do not meet the conditions of 6 CCR 1007-3, Section 265.198(a)(1), (2), or (3). As described above, the Parties have failed to maintain the waste in the FBI Pilot Tanks T-1 and T-2 in a manner that protects it from conditions that may cause the waste to ignite. In this case, the generation of flammable methanol gas within the explosive range and failure to respond to such conditions are the factors that lead to identification of this deficiency.</p>		
<p>5) Requirement: A hazardous waste TSD facility must ensure that a waste analysis plan is developed and followed that contains all of the information which must be known to treat, store, or dispose of the waste safely and in accordance with the requirements of Part 265 as required by 6 CCR 1007-3, Section 265.13.</p> <p>Deficiency: Procedures that have been developed to ensure the safe and proper management of a hazardous waste may, in some cases, constitute a waste analysis plan. In the case of the FBI Pilot Tanks T-1 and T-2, the Division considers Operations Order OO-776-274 to satisfy at least some of the requirements of a waste analysis plan. Failure to implement and follow this Standing Order constitutes failure to follow the required waste analysis plan and is a violation of 6 CCR 1007-3, Section 265.13.</p>		
<p>6) Requirement: Pursuant to Compliance Order on Consent number 97-08-21-01, the Parties are required to develop and implement a Tank Management Plan that identifies the status of each interim status tank system with regard to a date of achieving closure or rendering such tank system to a state of "RCRA Stable." Interim status tanks included in the Tank Management Plan that are not RCRA Stable are subject to the tank requirements of 6 CCR 1007-3, Part 265, Subpart J.</p> <p>Deficiency: The Tank Management Plan, Revision 2, dated January 27, 1999 states that the FBI Pilot Tanks have met the criteria for being RCRA stable. As defined in the referenced plan, a tank is considered to be RCRA stable when an out-of-service tank system has been placed in a configuration that is protective of human health and the environment. The need for periodic sampling and purging for methanol in the two FBI Pilot Tanks does not meet the definition of RCRA Stable and therefore renders the "RCRA Stable" determination incorrect and caused these tanks to be managed in a manner not compliant with regulatory requirements. For example, the FBI Pilot Tanks have not been inspected on a daily basis as required by 6 CCR 1007-3, Section 265.195, but have been inspected on a quarterly basis since October 1996.</p>		

COMPLIANCE ADVISORY

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
– POTENTIAL DEFICIENCIES –		
<p>1) Requirement: A hazardous waste TSD facility is required to ensure that all personnel who are involved with the management of hazardous waste successfully complete a program of classroom instruction and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirement of Part 265, as required by 6 CCR 1007-3, Section 265.16.</p> <p>Potential Deficiency: Facility personnel failed in a number of ways to implement Operations Order OO-776-274. Facility personnel responsible for the monitoring and assessment of the two tanks in question failed to recognize the hazards posed by the wastes in question and failed to take appropriate action in response to elevated levels of methanol gas above the LEL. Additionally, the individuals responsible for escorting the inspectors during the physical inspection of these tank systems were not knowledgeable about the tank systems or their status, including the hazards posed by the wastes contained within the systems. These are clear indications that facility personnel were not trained or, if they were trained, have not effectively implemented the training that they had received. Thus, their failure to recognize the hazards posed by the elevated levels of flammable gases in these tanks and failure to ensure management attention to the issues associated with this matter has resulted in deficiencies with the requirements of 6 CCR 1007-3, Part 265.</p>		
– AREA OF CONCERN –		
<p>1) At the time of inspection on September 27, 1999, Division inspectors were denied access to information necessary for assessing the compliance status of several interim status hazardous/mixed waste tank systems in Building 776/7. Division inspectors had prearranged the inspection with Kaiser-Hill three days prior to the date of inspection and had informed Kaiser-Hill of the scope and purpose of the inspection, which was to physically observe and review documents related to the following tank systems: FBI Pilot Pencil Tanks T-1 and T-2, Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and the Room 440 Degreaser System Piping. Facility representatives knowledgeable about these tank systems were restricted by Kaiser-Hill at the time of inspection from providing information regarding these tank systems.</p>		
– REQUIRED ACTIONS –		
<p>1) Because the Parties have demonstrated an inability to safely manage the FBI Pilot Tanks T-1 and T-2 in a manner that protects human health and the environment, the Parties shall submit Closure Description Documents (CDDs) for these two tanks within 45-days of receipt of this Compliance Advisory. The Parties shall remove all hazardous waste from these two tanks within 90-days from the date that the Division approves the CDDs for these tanks. The Parties shall complete the closure of these two tanks no later than 180-days from the date that the Division approves the Closure Description Documents for these two tanks.</p>		

COMPLIANCE ADVISORY

Page 6 of 7

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
- REQUIRED ACTIONS (continued) -		
<p>2) Based upon RFETS' determination that FBI Pilot Pencil Tanks T-1 and T-2, Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and Ultrasonic Degreaser System Piping need periodic sampling and purging, the Division no longer considers these tanks to meet the criteria for being RCRA stable. As a result, the Parties shall manage these tank systems in full compliance with 6 CCR 1007-3, Part 265, Subpart J.</p> <p>3) RFETS must submit copies of the following documents to the Division within fourteen (14) calendar days of receipt of this compliance advisory:</p> <ul style="list-style-type: none">a) analytical results (both pre-purge and post-purge) for the most recent sampling event for FBI Pilot Pencil Tanks T-1 and T-2, Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and Ultrasonic Degreaser System Piping;b) "tap and drain" status/plans for "tap and drain" for the tank systems mentioned above in 3)a);c) lock-out/tag-out records and records regarding any other means of isolating the tank systems mentioned above in 3)a), including dates on which those actions occurred;d) copies of any records regarding training of personnel and training dates for the implementation of Operations Order OO-776-274, <i>Combustible Gas Maintenance Plan</i>;e) a schematic (similar to the schematics provided in closure description documents) of each of the tank systems mentioned above in 3)a). If these schematics are not available, please provide the following information for each of the same tank systems: size of each tank, length of piping, extent and location of piping, lock-out/tag-out locations, and combustible gas sampling points;f) USQD-RFP-95.1051-CAS, Revision 0 (November 8, 1995);g) Kaiser-Hill Interoffice Memorandum DPS-036-96, Spent Organic Tanks with a Potential for Accumulating Hydrogen, March 5, 1996;h) RFETS Standing Order No. 40, Hydrogen Control Safety Requirements, August 29, 1996;i) Kaiser-Hill Interoffice Memorandum DPS-010-97, Use of the Expansion Seal Tap on Systems Potentially Containing Hydrogen, January 20, 1997;j) Calculation 95-SAE-007, <i>Analysis of Hydrogen, Explosivity and Pressure Rise in Unvented Pu-HNO₃ Solution Tanks Due to Radiolysis</i>, March 28, 1995;k) Work Package T0090683, Install Sample/Purge Manifolds to Sample H₂ Gas and Purge as Required;l) Memoranda, A. C. Tang to D. A. Warner, Sampling Gas from Tanks FBI-1 and FBI-2, 2/12/97;m) Memoranda, A. C. Tang to D. A. Warner, Sampling Gas from Tanks SR-3, SR-4, and SR-5, 2/12/97;n) Letter, A. C. Tang to D. A. Warner, ACT-006-97, Purging Hydrogen Gas From Tanks in Building 776 and 777, 2/26/97;o) Building 776/777 FSAR, Chapters 5 through 8 and 10;p) list of all tank systems at RFETS currently requiring sampling and purging for combustible gases; andq) list of all tank systems and piping being monitored for combustible gases on which hot tapping installations have occurred, including the dates of these hot tapping activities.		

COMPLIANCE ADVISORY

Page 7 of 7

FACILITY: Rocky Flats Environmental Technology Site (RFETS)	EPA ID #: CO7890011526	DATE: September 30, 1999
DEFICIENCIES, POTENTIAL DEFICIENCIES, OR CONCERNS NOTED AND REQUIRED ACTIONS		
– REQUIRED ACTIONS (continued) –		
<p>4) The Parties shall immediately implement Operations Order OO-776-274. The Parties shall ensure that monthly monitoring for methanol vapors in the FBI Pilot Pencil Tanks T-1 and T-2 is conducted. The Parties shall also ensure that quarterly monitoring for hydrogen vapors in the following tanks is conducted: Pencil Tank T-7, TCE Collection Tank T-1, Organic Solvent Tank T-1106, and Ultrasonic Degreaser System Piping. The Parties shall initiate all necessary remedial actions in accordance with the referenced Operations Order to mitigate levels of hydrogen or methanol in quantities that pose a risk to human health or the environment (i.e., quantities of flammable gases in excess of 25% of the LEL). The Parties shall provide a written notification to the Division within 10-days of any failure by the Parties to conduct the required monitoring, any failure to purge any system covered by such Operations Order, or any other noncompliance with the Operations Order.</p>		

9/9